

Quick Facts

About... Typhoid Fever (*Salmonella Typhi*)

What is typhoid fever?

Typhoid fever is a life-threatening illness caused by the bacterium *Salmonella Typhi*, which is found in the stool of an infected person. Unlike other *Salmonella* bacteria, *S. Typhi* is not found in animals. Typhoid fever is extremely rare in the United States and is almost always related to travel to an area of the world where typhoid fever is common, such as Asia, Africa, and Latin America. On average, 3 cases of typhoid fever are reported in Indiana every year.

How is typhoid fever spread?

S. Typhi is passed in the stool, and people become infected by ingesting stool from an infected person (fecal-oral route), usually as a result of poor hand hygiene after using the restroom. Transmission can occur by eating food or drinking beverages that have been handled by a person who is shedding *S. Typhi* or if sewage contaminated with *S. Typhi* gets into the water used for drinking or washing food. Transmission can also occur by touching contaminated items, such as soiled diapers or linens, and then touching your mouth.

What are the symptoms of typhoid fever?

- Fever (can be as high as 104°F)
- Chills
- Weakness
- Headache
- Stomach pains
- Loss of appetite
- Nausea

- Vomiting
- Diarrhea or constipation
- Flat, rose-colored rash

Symptoms usually begin within 8-14 days (range of 3-60 days) after exposure. The illness can be mild with a low-grade fever or severe with multiple complications. Persons given antibiotics usually begin to feel better within 2 to 3 days.

Are there complications from typhoid fever?

Depending on the antibiotics used, 15%-20% of cases may experience relapse. With prompt antibiotic treatment, death occurs in less than 1%. People who do not get treatment may be sick for weeks or months, and up to 20% may die from the infection.

Unlike most other intestinal bacteria, typhoid fever bacteria can penetrate the intestines and enter the bloodstream. The bacteria often travel to the gall bladder, where they grow and continue to enter the intestines. The bacteria can also travel to other parts of the body and cause infection. This is rare if appropriate antibiotics are taken.

A small number of people, called carriers, recover from the illness but still carry the bacteria in their stool. About 2%-5% of people infected become carriers, following acute illness, mild illness, or subclinical infections. The chronic carrier state is most common among persons infected during middle age, especially women.

How do I know if I have typhoid fever?

A person having diarrhea lasting more than 24 hours should consult a health care provider. A health care provider may collect a stool sample to test for *Salmonella*. If you become ill while traveling in a foreign country, call the nearest United States embassy for a list of doctors.

How is typhoid fever treated?

Typhoid fever can be successfully treated with appropriate antibiotics. Most people who take medication recover completely. It is very important to complete the entire course of medication in the prescribed dosage, even if you begin to feel better. Stopping your medication too soon may lead to antibiotic resistance and possible carrier state. A health care provider may retest your stool to determine if you have become a carrier.

Is typhoid fever a reportable disease?

Yes. Health care providers or laboratories must immediately report cases of typhoid fever to the local health department (LHD) or the Indiana State Department of Health (ISDH). The LHD will contact all cases diagnosed with typhoid fever, so a possible exposure can be determined to help prevent others from becoming ill.

How can typhoid fever be prevented?

If you are traveling to an area where typhoid fever is common, follow these precautions:

- Get vaccinated:
 - There are two typhoid vaccines available in the United States. Ask your health care provider or your nearest travel clinic for more information.
 - To be effective, the vaccination must be completed at least one week before you travel.
 - Booster shots may be needed for future travel.
- Practice good hygiene:
 - Thoroughly wash hands with soap and water after using the restroom; after assisting someone with diarrhea and/or vomiting; before, during, and after food preparation; and after exposure to raw meat products; and after diapering children (please refer to Quick Facts about Hand Washing).
 - Clean food preparation work surfaces, equipment, and utensils with soap and water before, during, and after food preparation.
- Eat safe foods and drink safe water (Remember: Contaminated foods may look and smell normal):
 - Use treated water for washing, cooking, and drinking.
 - Wash all produce before eating raw or cooking.
 - Do not eat uncooked shellfish.
- Protect others:
 - Persons with diarrhea and/or vomiting should not prepare food or provide health care for others and should limit direct contact with others as much as possible.
 - Persons with diarrhea and/or vomiting should not attend a day-care facility or school.
 - Persons with diarrhea and/or vomiting shall be excluded from employment involving food handling (Indiana Retail Food Establishment Sanitation Requirements, 410 IAC 7-24-122).
 - Do not change diapers near recreational water.
 - Do not go swimming or use hot tubs if you have diarrhea and for at least 2 weeks after diarrhea stops.

- Safe travel outside of the United States:
 - Drink bottled beverages and water, even when brushing teeth.
 - Do not eat uncooked fruits or vegetables unless you peel them yourself.
 - Do not eat foods or beverages from street vendors.
 - Do not consume local water or ice.

Where can I learn more about typhoid fever?

To search Indiana data and statistics:

<http://www.in.gov/isdh/18888.htm>

To search the Indiana Food Protection Program:

<http://www.in.gov/isdh/20640.htm>

To search disease information:

http://www.cdc.gov/nczved/divisions/dfbmd/diseases/typhoid_fever/

To search vaccination and travel:

www.cdc.gov/vaccines/vpd-vac/typhoid/default.htm

www.cdc.gov/travel/

To search for national data, statistics, and outbreaks:

www.cdc.gov/mmwr/

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